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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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K.F. ROSS P.C.
5683 RIVERDALE AVENUE
SUITE 203 BOX 900
BRONX, NY 10471-0900

EXAMINER	
MAKI, STEVEN D	
ART UNIT	**PAPER NUMBER**
1733	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/808,242	SOMMER ET AL.	
	Examiner	Art Unit	
	Steven D. Maki	1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 March 2007 and 21 February 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *030507*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

1) The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: Incorporation of "hydrodynamically bonding the layer of hydrophilic fibers to the spunbond filament layer to create a two-layer laminate forming an absorbent cloth".

2) The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3) Claims 1-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, the scope and meaning of "the tensile strength thereof at maximum bonding as defined in DIN 53815" is ambiguous. One of ordinary skill in the art is not reasonably appraised of the scope of protection afforded by this language. In particular, the meets and bounds of "maximum bonding" is unclear. What constitutes maximum bonding? Is maximum bonding obtained only when 100% of the surface area of the spunbond web is bonded so as to exclude the use of a heated embossing roller as in applicant's figure 1? Furthermore, the description of "maximum bonding as defined in DIN 53815" is confusing and ambiguous since DIN 53815 is directed to a test for determining maximum tensile force and maximum tensile stress instead of a test for determining "maximum bonding". DIN 53815 fails to describe bonding of a spunbond and thereby cannot be used to define "maximum bonding". The condition(s) under which "maximum bonding" is (are) defined / determined remain unclear.

4) The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5) Claims 1-17 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

As to claim 1, the subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention (i.e. the new matter) is "maximum bonding as defined in DIN 53815". DIN 53815 is directed to a test for determining maximum tensile force and maximum tensile stress instead of a test for determining "maximum bonding". DIN 53815 fails to describe bonding of a spunbond and thereby cannot be used to define "maximum bonding". The original specification describes using DIN 53815 to determine "high tensile strength capacity" instead of "maximum bonding".

6) The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the

applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8) **Claims 1-6, 11-13 and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by Anderson et al (US 7,022,201).**

See figure 3, col. 7 lines 27-35, col. 8 lines 23-31, 41-57, col. 9 lines 6-7, col. 10 lines 30-38, col. 11 lines 66-67, col. 12 lines 1-6, col. 13 lines 16-58, example 1. The claimed method is anticipated by Anderson et al's method. The claimed tensile strength of the nonwoven spunbond filament layer is inherent in Anderson et al's point bonded spunbond. As to deforming (claim 5), note Anderson et al's stretching and creping steps. As to wetting agent (claim 6), note incorporation of Evans at col. 13 lines 59-63 and col. 16 lines 23-42 of Evans. The composite fabric (finished product) in Anderson is a "two-layer laminate" as claimed since Anderson et al teaches hydroentangling the cellulosic fibers of the cellulosic fiber layer 18 with the fibers of the bonded spunbond nonwoven web 20 such that the cellulosic fibers are driven "partially through" the fibers of the nonwoven web (col. 14 lines 21-25) and the composite fabric has a "continuous filament rich side" (col. 13 line 13). The preliminary thermal bonding of the nonwoven web together with the use of hydroentangling to only partially drive the cellulosic fibers through the fibers of the nonwoven web prevents intimate mixing of the fibers for

obtaining a single homogeneous fiber layer instead of a "two-layer laminate". Furthermore, examiner notes that "two-layer laminate" was added by amendment to claim 1 and is not specifically identified in the original disclosure. Under such circumstances, examiner finds it reasonable to interpret "two-layer laminate" as merely defining the product of hydroentangling a cellulosic fiber layer 18 laid on non-woven web 20 as contemplated by Anderson. It is emphasized that "maximum bonding" is a broad term since the conditions for bonding are not specified. In view of the broad recitation of "maximum bonding" and Anderson's specific teachings as to improving strength by using the specified total bond area and bond density, it is reasonable to conclude that Anderson's prebonded spunbonded web has the claimed tensile strength.

9) **Claims 1-4, 11 and 16-17 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Skoog et al (US 6,177,370).**

Skoog et al discloses a process for making a nonwoven fabric for use as a wiper comprising providing a lower **prebonded spunbond layer 226**; providing a **cellulosic fiber layer 218**; providing an upper **prebonded spunbond layer 224**; sandwiching the cellulosic fiber layer between the spunbond layers; and hydroentangling the layers using water jets from manifolds 236(a)-(c). See figure 4, col. 3 lines 38-40, col. 4 lines 44-57, col. 7 lines 21-35, 58-67, col. 8 lines 6-44. The cellulosic fiber layer 218 may comprise wood pulp fibers. The spunbond layers are provided from rolls 228, 230. See figure 4. Alternatively, the spunbond layers may be formed by a spunbond process and passed directly through the apparatus of figure 4 without first being stored on rolls. See col. 7

lines 28-35. With respect to prebonding the spunbond layer (continuous filament layer), Skoog et al teaches prebonding the continuous filament layer with a pin bond pattern using thermal bond rolls comprising one roll with pins and a smooth anvil roller such that the total bond area is less than 30 percent and a uniform bond density is greater than 155000 bonds per square meter. Preferably, the pin bond density is 387000 to about 542000 pin bonds per square meter and a total bond surface area is from about 10 percent to about 25%.

As to claim 1, the claimed process is anticipated by Skoog et al's process. The claimed tensile strength of at least 50% of the tensile strength at "maximum bonding" is inherent in Skoog et al's prebonded spunbond layers. It is emphasized that "maximum bonding" is a broad term since the conditions for bonding are not specified. In view of the broad recitation of "maximum bonding" and Skoog's specific teachings as to improving abrasion resistance by using the specified total bond area and bond density, it is reasonable to conclude that Skoog's prebonded spunbonded web has the claimed tensile strength. In any event: it would have been obvious to one of ordinary skill in the art to prebond the spunbond layers in Skoog et al's process such that the tensile strength of the prebonded spunbond layer is "at least 50% of the tensile strength thereof at maximum bonding as defined in DIN 53815" since (1) Skoog et al teaches prebonding the spunbond layer (continuous filament layer) such that the total bond area is less than 30 percent and a uniform bond density is greater than 155000 bonds per square meter (col. 7 line 58 to col. 8 line 3) and (2) Skoog et al teaches that the high strength of the synthetic fiber structure zones (spunbond layers) produced by

prebonding prior to hydroentangling permits rigorous pressure hydroentangling (col. 11 lines 1-4). It is noted that claim 1 is not limited to a two layer laminate. The fiber laminate made by claim 1 reads on two or more layers.

As to claims 2 and 3 (calender / heated embossing drum cylinder), Skoog et al teaches prebonding the continuous filament layer with a pin bond pattern using thermal bond rolls comprising one roll with pins and a smooth anvil roller.

As to claims 4 and 11 (max free filament length between bonding points less than 15 mm), Skoog et al teaches a total bond area being less than 30 percent and a uniform bond density being greater than 155000 bonds per square meter.

As to claim 16 (apply second spunbonded), Skoog et al teaches using a second spunbond web. See figures 4, 5 and 6.

As to claim 17 (water-jet treatment), Skoog et al produces water jets from manifolds 236(a)-(c).

10) **Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Skoog et al as applied above and in view of Evans (US 3,485,706).**

As to claims 13 and 14, it would have been obvious to apply a wetting agent to the prebonded spunbond prior to hydroentangling since Evans, directed to hydroentangling nonwoven webs having short fibers and/or continuous filaments, suggests applying a wetting agent to the fibers prior to hydroentangling to increase the ease of processing (hydroentangling). See figures 1-2, abstract, col. 5 lines 6-34, col. 16 lines 24-42. As to claim 14, a "surface active agent" is taken as a well known / conventional type of wetting agent per se and it would have been obvious to use such a

known wetting agent in Skoog's process to obtain the ease of processing disclosed by Evans. The suggestion to apply a wetting agent to the prebonded spunbond comes from Evans instead of the official notice. It is noted that Skoog et al incorporates Evans by reference at col. 9 lines 41-45.

11) **Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Skoog et al as applied above and in view of Bouchette (US 6,110,848).**

As to claim 15, it would have been an obvious alternative to one of ordinary skill in the art to apply the cellulosic fiber layer on the lower prebonded spunbond ("long filament layer") using an air laying device instead of a wet laying device since Bouchette, which like Skoog et al teaches hydroentangling an upper spunbond web, a cellulosic fiber layer and a lower spunbond web (claims 1, 15), suggests forming the cellulosic layer using either a wet laying device (figure 2, claims 17-19) or a dry laying device (figure 8, claim 12).

12) **Claims 5 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Skoog et al as applied above and in view of Anderson et al, Sabee (US 4,223,063) or Chhabra et al (US 2004/0137200).**

As to claims 5 and 12, it would have been obvious to deform the prebonded spunbonds in Skoog et al's process of making a nonwoven fabric for use as a wiper in view of the suggestion in Anderson et al, Sabee or Chhabra et al to deform a spunbond to increase the thickness thereof wherein Anderson et al teaches necking and creping the spunbond to improve softness and conformability of a wiper formed therefrom, Sabee suggests deforming a nonwoven such as spunbond to increase its bulk and form

a rough finish, which is useful for wiping (col. 12 lines 42-46) and Chhabra et al suggests deforming a nonwoven such as spunbond to increase its thickness, which is a recognized desirable attribute of a wipe (paragraphs 6, 11).

13) **Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Skoog et al in view of Anderson et al, Sabee or Chhabra et al as applied above and further in view of Evans.**

Evans is applied against claims 6 and 7 for the same reasons given above for claims 13 and 14.

14) **Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Skoog et al in view of Anderson et al, Sabee or Chhabra et al and further in view of Evans as applied above and further in view of Bouchette.**

Bouchette is applied against claim 8 for the same reasons given above for claim 15. As to claims 9 and 10, see above comments on claims 16 and 17.

Remarks

15) Applicant's arguments filed 2-21-07 have been fully considered but they are not persuasive. Also, the translation of DIN 53815 filed 3-5-07 has been received and considered.

Applicant argues that "tensile strength at maximum bonding" is a term of art defined in DIN 53815. Examiner disagrees. Contrary to applicant's argument, "tensile strength at maximum bonding" is a not term of art defined in DIN 53815. It is acknowledged that DIN 53815 describes determining maximum tensile stress (tensile

strength). However, DIN 53815 fails to describe "maximum bonding". DIN 53815 fails to describe the condition(s) under which "maximum bonding" is determined.

Applicant comments that the prebonding to 50% of the tensile strength at maximum bonding is very important. Examiner comments that "the tensile strength thereof at maximum bonding" is indefinite and consequently fails to define a tensile strength for the spunbond layer different from that disclosed in either Anderson et al or Skoog et al.

Applicant argues "The endless fibers of the prebonded substrate link with the hydrophilic surface fibers to form a very durable absorbent cloth that has proven to have exceptional resistance to abrasion and excellent absorbency." (page 7 of response filed 2-21-07). This argument is not persuasive. First: Attorney arguments cannot take the place of evidence. See MPEP 716.01(c). Second: Unexpected results cannot overcome a 102 rejection. See 2131.04. Third: The claimed invention has not been compared to Skoog et al.

Applicant argues that the finished product in Anderson is not a "two-layer laminate" as defined in claim 1. Examiner disagrees. The composite fabric (finished product) in Anderson is a "two-layer laminate" as claimed since Anderson et al teaches hydroentangling the cellulosic fibers of the cellulosic fiber layer 18 with the fibers of the bonded spunbond nonwoven web 20 such that the cellulosic fibers are driven "partially through" the fibers of the nonwoven web (col. 14 lines 21-25) and the composite fabric has a "continuous filament rich side" (col. 13 line 13). The preliminary thermal bonding of the nonwoven web together with the use of hydroentangling to only partially drive the

cellulosic fibers through the fibers of the nonwoven web prevents intimate mixing of the fibers for obtaining a single homogeneous fiber layer instead of a "two-layer laminate". Furthermore, examiner notes that "two-layer laminate" was added by amendment to claim 1 and is not specifically identified in the original disclosure. Under such circumstances, examiner finds it reasonable to interpret "two-layer laminate" as merely defining the product of hydroentangling a cellulosic fiber layer 18 laid on non-woven web 20 as contemplated by Anderson. Finally, applicant's argument that Anderson does not teach a two-layer laminate is inconsistent with applicant's recognition that (1) Skoog teaches a three-layer laminate and (2) Skoog uses a method substantially identical to that of Anderson.

Applicant comments and examiner agrees that Skoog discloses a three-layer laminate. Figure 2 of Skoog illustrates the three layer laminate. Examiner adds that claim 1 reads making a three-layer laminate and is not limited to making a laminate having only two layers.

Applicant argues that Skoog's prebonded spunbonded web is not prebonded as defined in claim 1 to 50% of its maximum tensile strength. This argument is not persuasive. In view of the broad recitation of "maximum bonding" and Skoog's specific teachings as to improving abrasion resistance by using the specified total bond area and bond density, it is reasonable to conclude that Skoog's prebonded spunbonded web has the claimed tensile strength.

16) No claim is allowed.

17) Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

18) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven D. Maki whose telephone number is (571) 272-1221. The examiner can normally be reached on Mon. - Fri. 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Steven D. Maki
May 24, 2007

Steven D. Maki 5-24-07
STEVEN D. MAKI
PRIMARY EXAMINER